CROP TALK

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Do Soybean Inoculants Always Provide More Yield?

by Horst Bohner, Soybean Specialist, OMAFRA

There has been a marked increase over the last 5 years in the use of soybean inoculants on fields with a history of soybean production. The majority of fields now receive an inoculant every year. There are a number of reasons for this widespread adoption. Expectations of a yield increase, along with higher commodity prices, are certainly two good reasons. Another reason is the convenience of "pre-inoculants". These products can be ordered ahead of time and come already applied to the seed, eliminating the issue of application on the farm.

Inoculant Research Plots

Large scale replicated farm trials and small plot trials that we have conducted every year since 2004 have shown an average yield increase every year from inoculant use. The overall average has been 1.25 bushels per acre (bu/ac), with responses as high as 6 bu/ac. A good return on investment can be expected based on these results because the product cost is relatively low. However, not every field or every producer will see a benefit. Being able to predict when a response is more likely could be helpful in making management decisions.

Ammonium Soil Test

Predicting the likelihood of a response has proven to be difficult because of the complexity of soil biology. One thing that is believed to impact nitrogen fixation is the amount of nitrogen readily available in the soil. If soil nitrogen levels are high, N fixation will be reduced. To determine what could be used as a predictor of yield response to inoculants, we conducted some experiments testing for soil nitrate, soil ammonium, and other factors. None of the factors we looked at, including soil pH, organic matter, and soil nitrate levels, corresponded well to the yield response associated with an inoculant. However, the one

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thing that did show some promise was an ammonium soil test. Ammonium levels did show a reasonably strong correlation to the level of yield response. (Figure #1)

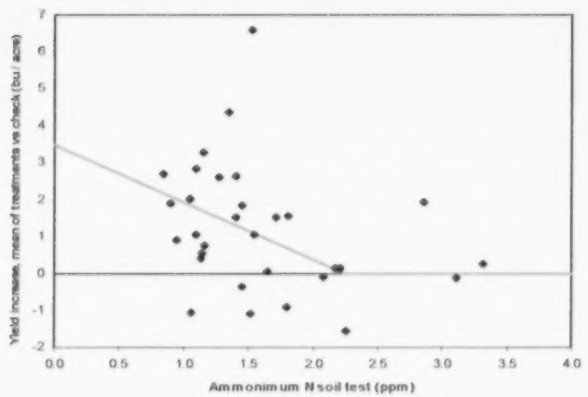

Figure #1. Soybean Yield Response Versus Soil Ammonium-N Soil Test in 38 Ontario trials from 2007-2009.

Figure #1 shows the "best fit plateau regression" of the yield response to inoculation on soil ammonium-N. What this suggests is that there is no yield response to inoculation above a soil ammonium-N test of 2.25 ppm. Below 2.25 ppm, the predicted benefit is 1.55 bu / acre per 1 ppm drop in soil ammonium-N. Although the results are statistically significant, as is evident from the graph, the response is not a perfect fit. A soil test for ammonium may provide some indication of the likelihood of response, but it is not a sure thing. This is probably because there are numerous other factors which will dictate the level of response, including soil moisture, temperature, soil biology, and nutrient levels. However, this study may provide an indication as to why some fields do not respond positively to an inoculant treatment - high levels of ammonium in the soil.

How Does Tillage Affect Glyphosate Performance?

by Mike Cowbrough, Weed Management Field Management Program Lead, OMAFRA

In wheat stubble fields to be planted with corn, there was an unacceptable level of volunteer wheat plants that had emerged after the late September glyphosate application. Volunteer wheat is worth controlling since a modest density of 20,000 plants/ac, when left uncontrolled has resulted in corn yield losses of 5% in Ontario*. It's best to control volunteer wheat prior to planting corn, especially if you are planting non-glyphosate tolerant hybrids. The following questions were asked this spring concerning management of volunteer wheat:

1. Will tillage control volunteer wheat?

Answer: No, not with secondary tillage tools (e.g. disc, cultivator). Yes if using a moldboard plough. For the majority of producers, the type of tillage they use prior to planting corn will only kill about 50% of the wheat stand.

2. I want to work the ground first and then spray glyphosate after to control any plants that escaped tillage, how long should I wait to apply glyphosate?

Answer: Ideally a week, or until you can see visible signs of growth on the plants that have escaped the tillage pass. The photo below shows volunteer wheat control 10 days after glyphosate was sprayed one day after the tillage pass. The control is not acceptable. During this demonstration, it appeared that when tillage did not kill the plant, it would injure it enough to significantly reduce the uptake and movement of glyphosate within the plant. When we followed up with another pass of glyphosate 10 days after tillage, control was excellent because the injured plants had started to actively grow again.

Control of volunteer wheat 10 days after glyphosate was applied 1 day after tillage.

3. If I spray glyphosate first, how long should I wait to work the ground?

Answer: For small annual plants, all glyphosate labels specify to wait 1 day between application and tillage. As annual plants get bigger, it would be prudent to increase that time to 3 days. The photo below shows the control of volunteer wheat 10 days after glyphosate had been applied 3 days prior to tillage.

Control of volunteer wheat at 10 days following a 3 day pre-till glyphosate application

4. How long must you wait to till a field after applying glyphosate for other weed species?

Answer: It depends on the targeted plant and its stage of growth. Most glyphosate labels state 7 days for the majority of perennial weeds (using the "when in doubt" strategy I assume) otherwise there are weed and stage specific guidelines:

- 1 day or more: annual weeds
- 3 or more days: dandelion (small), quackgrass (twitch grass)
- 5 or more days: Canada thistle (bud stage), alfalfa,
- 7 or more days: dandelion (large), Field bindweed, milkweed, toadflax,
- 10 or more days: Canada thistle (rosette stage)

Source: Wilson et al., 2010. Volunteer wheat (*Triticum aestivum* L.) competition in corn (*Zea mays* L.). Can. J. Plant Sci. 90:919-924.

Putting the "AgSmarts" Into Smartphones - The Basics

by Ian McDonald, Applied Research Coordinator, OMAFRA

Technology continues to play an ever increasing role in today's agriculture. We are all now used to the talk about precision agriculture, RTK level autosteer, variable rate application, computers controlling barn functions, and other new technologies. One of the newest technologies being explored on the farm is the SmartPhone. I have traveled across the province giving seminars on how to use SmartPhones in agriculture. I am amazed at the interest level there is. I am more amazed when I get phone calls by people who have gone out and purchased one, and now want some help on making it work for them.

An Office In Your Pocket

Why are SmartPhones such a good fit for farmers? Have you ever sat in your office and been frustrated with the fact that you really need to be somewhere else? Smartphones allow farmers and agri-business to deal with much of the "office-side" of their business while they are out doing "the farming". Farmers no longer need to be tied to their desk to complete tasks such as record management, financial management, marketing, information gathering, task tracking, system / building monitoring, remote control of equipment and devices, etc. Think of a SmartPhone as an "Office In Your Pocket".

Although SmartPhones are often thought of as tools for the high-end business types, this is changing. We see the proliferation of these amazing devices into everyday life and businesses. Who more than farmers and their advisors spend less time in the office, yet needs to stay on top of vital issues that should keep them chained to their desk?

Although more costly than the cell phone, the financial and business rewards achievable with the SmartPhone will soon pay back the difference. Today's Smartphone that you carry on your hip has more computer capability than the old paper weight clunker sitting in the office that you bought for big money only a few years back. A SmartPhone has almost unlimited utility in what you can do with it, although it's not a universal wrench or a hammer. Sure, you can communicate with it like any other phone. But these devices can text, e-mail, search the web, store and record data, remotely monitor and operate equipment, act as a GPS, and take pictures and video.

What Kind of SmartPhone Should I Buy?

So you have made the decision, and are going to upgrade to a Smartphone. The initial questions you need to ask are "what phone do I buy", and "who should I choose as my service provider?" The current choices are broad and expanding rapidly. However, there are four main choices are in the operating system:

1. apple iphones,
2. blackberries,
3. windows and
4. android.

Although the sales pitches promote one over the other, they all do essentially the same things. The features of the phone, such as screen size, screen resolution, keyboard, and software, will tip your decision. It's best to play with them and get a feel for what you like. Talk to your neighbors and business contacts about what phone they use and why.

Who Should I Choose As My ISP?

What ISP (internet service provider) should you choose? Again, the ISPs all say they are the best, and new services and equipment upgrades keep changing. The important thing is whether the services of the provider work well in your geographic location. Again, talk to SmartPhone users in your area to make sure that the service of the provider you're thinking of going with is good. Another consideration is the bundling options with other services, such as phone and home internet. Also ask about the upgrade and replacement policies, because the technology is changing quickly. Those darn little things do fall into the water trough!

Software

SmartPhones (and cell phones for that matter) were not designed with farmers in mind. This means that SmartPhone software addressing specific farming needs is still in its infancy. That being said, the standard features of the devices are still very useful in farming. Software applications specific for farming are beginning to be developed. This is where the real power of the technology will be demonstrated for farmers and agri-business. The biggest software issue is what "platform" (ie blackberry,

iphone, android operating system) the "apps" will be developed for. The four main operating systems are quite different, so that an app developed for one platform has to be separately developed for the others. If farmers start leaning toward one operating system, then the software development is likely to follow. If you are not with the right platform, you might be left behind or delayed in being able to use the newest software apps. Only time will tell. At this point, there is no clear winner.

Apps To Get You Started

GFO Smart Sell
grain market information
http://www.gfo.ca/sellsmart.aspx

Weather Eye from The Weather Network
with real-time radar and satellite,
forecasts for chosen locations
http://www.theweathernetwork.com/mobile/applications

YouTube
search and watch videos
http://m.youtube.com

Pioneer Agronomy Updates
http://www.pioneermobilesite.com/mobile/

Dekalb Hybrid Selector
http://dekalbmobile.ca/

Ag News
http://www.agreader.ca/

Other Smartphone resources can be found at:
http://www.uoguelph.ca/farmsmart/presentations/2011/Agsmarts_Smartphones_IMcDonald.pdf

A Tough Spring on Soils - Now What?

by Adam Hayes, Soil Management Specialist – Field Crops, OMAFRA

The spring of 2011 was a lot different than the springs we have experienced for a number of years. The cool, wet weather in many areas made it difficult to get crops planted on time. As the calendar moved forward the pressure to get on the field increased, resulting in fieldwork being completed in less than ideal conditions. A number of issues arose and many still remain. The biggest was the amount of rain. This caused significant soil erosion in many areas, especially on steep slopes and where there was little cover on the soil. Significant rainfall also resulted in ponding in parts of fields for long periods of time. These soils became compacted and sealed off leaving the area wet for most of the season. Saturated soils impeded the exchange of oxygen and slowed root growth in the soil. Soils with poor drainage experienced denitrification. In soils with good drainage, nitrogen moved down through the soil profile. The push to get the crop planted resulted in soil compaction, especially in or near areas that were slower to dry out. Growers who were on the fields before they were fit soon saw the negative impact on the crop. Those who waited generally were glad they did.

So what can be done to address these issues?

Areas Where Water Ponded

- When the area is dry enough, run over the area with something to break the crust such as a coulter cart, rotary hoe, cultivator or a small disk.
- Once the crust is broken, plant a deep-rooted cover crop that will send roots down and help to create pores for water movement and crop growth. You could also consider planting a cereal crop with the deep-rooted cover crop to help create some soil structure in the topsoil. A winter cereal, such as wheat or rye, left to grow until spring can help to draw moisture out of the soil, especially if it is not killed off until close to planting.
- Unless you have been missing the recent rains, the area will not be dry enough to do any deeper tillage to open it up. The best bet may be to put the field into winter wheat as soon as possible and hope that it is dry enough after harvest to till with a chisel plow or deep-tillage implement. Once that is done, plant a cover crop to help keep the soil open.
- Finally, if this area has been a problem for some time it may be worth considering improving the drainage in that area of the field. It can be accomplished by adding more tile to the area or by adding surface drainage.

Areas Where Soil Erosion Is Occurring

- Increase the amount of residue on the soil surface, consider planting a cover crop and/ or perform operations across the slope.
- Where more significant soil erosion is occurring, also consider erosion control measures or structures such as grassed waterways, diversion terraces, and water and sediment control basins to manage water flow over the field.

It is hard to plan for the spring we experienced this year. But creating a healthy soil environment provides the soil with a resiliency that can help buffer the effects of adverse weather. A good crop rotation that returns lots of organic matter to the soil and includes crops with fibrous root systems helps to build organic matter and soil structure. This will improve soil drainage, help the soil resist erosion and soil compaction, and improve water holding capacity for those dry years. Minimal- or no-tillage leaves much of the soil structure and the macropores intact. Manure or other organic matter additions are also beneficial. The bottom line is that a healthy soil will go a long way towards handling what Mother Nature throws at us.

Effective Dairy Pasture

by Jack Kyle, Grazier Specialist, OMAFRA

Pasture can be an effective forage feed source for milk cows, dry cows and heifers. A well managed pasture will be very competitive with any other crop use that you might consider for that land base.

The key to maximizing both forage and livestock production is to manage the forage for optimum growth and optimum bite size for the animals grazing. If the grazing animal cannot get a big bite of quality forage, then production is going to suffer. When we feed stored feed, great effort is made to have optimum forage quality with appropriate length and excellent palatability. Pasture managed with the same diligence that is given to managing a feed bunk will give excellent returns. In the pasture situation you are not only managing animal intake, but also managing the forage growth to optimize yield and quality.

Optimizing Plant Growth

To get optimum growth from the forage plants they need to be in a rapid growth state for as much of the growing season as possible. Maintaining a grazing forage height between 10 cm (4 inches) and 30 cm (12 inches) will allow the plants to maintain good growth and capture all the available sunlight to drive the photosynthesis. This plant height will also maintain a substantial root system that will be able to gather water and nutrients throughout the summer and minimize a summer dormancy period should we get into hot dry weather. To maintain this level of forage growth, the pasture manager needs to move livestock to fresh grass every couple of days. If too much pasture is offered at a time then selective grazing will take place and the less desirable plants will not be grazed and become mature. After a plant is grazed it needs time to rest and re-grow. This is the key point of pasture management - rest and recovery.

Optimizing Animal Intake

From an animal management standpoint, maximizing bite size is the key to good productivity. Cattle bite at a rather constant rate and for about 8 hours each day. The variable that you can control is the size of the bite. By providing pasture that is the optimum size for the animal to bite (10 - 30 cm), you will have taken the first big step to maximize intake. The second step is to have fresh forage on offer at all times. Livestock are not going to eat forage that has been laid on or fouled with manure or urine. The longer the animals are in a given paddock, the greater the percentage of forage in that paddock that is going to be unpalatable because of what has been done to it. Thus the importance of frequent moves to fresh pasture.

Fence, Water & Laneways

Fencing is the tool that will allow you to manage your livestock to provide re-growth time for the grass and manage the quality and quantity of forage available for your livestock. Temporary or semi- permanent single or double wire electric fence will allow you to control your livestock to achieve improved pasture performance from both the forage and the livestock.

Moving livestock to fresh pasture every 1 - 2 days will optimize plant growth by allowing the plants adequate rest and recovery time. (It takes 15 - 20 days to recover from grazing in the early part of the season and 30 - 45 days in late summer.) These same 1 - 2 day moves will provide readily available fresh forage that will encourage optimum bite size by the livestock.

Grazing livestock need ready and easy access to fresh clean water. The water supply should be in the paddock they are grazing. If livestock have to walk a distance for water they will drink less, which means they will eat less. If they are walking away from the pasture to drink they will deposit manure and urine in the lane ways and around the water source which does not benefit the pastures. The easiest and most effective water system is to use a pipeline system utilizing black plastic pipe laid on the surface along a fence.

For milk cows that are going to travel to and from the barn twice a day, good lanes are essential for ease and comfort of cow movement. A well drained firm surface will facilitate cow movement even during wet weather. This combination of readily available forage and fresh water will give maximum forage production and maximum animal performance. By applying these principals to your pasture system you will make pasture a profitable part of your farm operation.

Scout Corn Ears for Western Bean Cutworm Damage

by Tracey Baute, Field Crop Entomologist & Greg Stewart, Corn Specialist, OMAFRA

This has been quite a year for western bean cutworm (WBC) activity in Ontario. Over 120,000 moths have been captured in our traps so far this season. Moths started to emerge and fly right on schedule, despite the delay in planting, putting much of our corn acreage at a higher risk of egg deposition. Moths prefer to lay their eggs in fields that are in the pre-tassel to full-tassel stages. Unfortunately most counties had some fields within those stages for longer periods than normal.

Figure 1. Full grown western bean cutworm larva. (T. Baute, OMAFRA)

An increased risk of egg laying also means an increased risk of ear damage and ear rot this fall. Some fields may be at risk of extended WBC feeding this fall, particularly those that are late planted or where egg laying occurred over a wider window. More mature corn and warm temperatures can contribute to quicker termination of WBC feeding.

There were a few infestation "hot spots" this year, including Bothwell to Strathroy and south of Tillsonburg. These fields experienced infestations as high as 30 to 80% of the plants having egg masses on them. Fields that were not sprayed in these areas are now seeing significant ear damage. Even fields planted to Herculex or SmartStax Bt corn that contain Cry1F are seeing greater amounts of damage than growers were expecting. These Bt hybrids provide only approximately 70 to 80% control, so under heavier pressure, the damage can be significant.

All corn producers need to get out this fall and assess what kind of damage they have experienced. Scouting will identify areas at risk of higher overwintering populations and therefore infestations occurring again next year. Scouting will also help in the decisions to harvest the crop earlier, or to segregate grain from those fields to reduce risk of ear rot and vomitoxins.

What Does WBC Damage Look Like?
Western bean cutworm larvae either enter the ear from the silk channels or enter through a hole they drill along the side of the cob. Once inside they can feed on quite a few kernels and expose the ear to ear rot organisms. There is also always evidence of frass at the ear tip or at the entry hole where the feeding has occurred. Once the husk is peeled back, the guilty larva is revealed.

Scout random areas of the field. Look at 10 consecutive ears in a row. Peel back the husk and determine if larvae are present and make note of how extensive the feeding damage is. Birds diving into fields is also a good indication that WBC is present and unfortunately they will also contribute to the ear damage.

Once the larvae reach the 6th and last instar, they drop to the soil and tunnel down deep to overwinter there. If larvae are nowhere to be found in the field, it is a good indication that they have already started to get ready to overwinter.

Growers in the hotspot areas of Bothwell / Strathroy and south of Tillsonburg (particularly those concerned about ear rots and vomitoxins) should consider planting Agrisure Viptera Bt corn hybrids next year, because that Cry is the only one known to provide 99 to 100% control of WBC.

Figure 2. Typical western bean cutworm ear damage. (T.Baute, OMAFRA)

Planting early is a good strategy for all growers as it avoids having fields in the pre-tassel to full tassel stages when most of the WBC moths are flying around in mid to late July. When later planting is unavoidable, like in 2011, extra emphasis will need to be placed on hybrid selection, scouting, and control.

For more information on western bean cutworm, refer to the following websites and publications:

Baute Bug Blog:
http://bautebugblog.com/tag/western-bean-cutworm/

OMAFRA Publication 811, Agronomy Guide for Field Crops: http://www.omafra.gov.on.ca/english/crops/pub811/13corn.htm#wbcutworm

Ontario WBC Trap Network:
http://www.compest.ca/default/index.cfm/wbc-trap-network/

Pricing Corn Silage In 2011

by Joel Bagg, Forage Specialist & Greg Stewart, Corn Specialist, OMAFRA

"What is corn silage worth when corn prices are flirting with $7 per bushel or more?" Corn prices have gone up to unprecedented levels and will be the big factor in pricing this year's corn silage. The corn crop is also quite variable across the province with a combination of delayed planting dates, a very dry early summer and extremely variable thunderstorm activity and rainfall in late summer. The determination of the price of corn silage must be tailored to each individual situation.

Local supply and demand and negotiation between buyer and seller ultimately determines the price. With the today's high grain corn prices, the price of corn silage looks dramatically different than it was only a year or two ago. It is important that you make your own assumptions for your situation and calculate your own costs, in order to determine what you feel is an acceptable price. Then negotiate the best you can.

Example Calculations
One method to establish the price of corn silage is to compare it to the local value of grain corn to determine a minimum price. (Refer to Table 1.) As a seller, you would not want to sell it as corn silage for less than you could net selling it as grain. Buyers feeding corn silage to livestock might be prepared to pay more if they have to, depending on what alternate feedstuffs are available. From a livestock nutrient point of view, corn silage in the ration may be worth either more or less than is reflected in the market.

These calculated corn silage values are not necessarily the cost of production, or the feed nutrient values, but reflect the market value of the alternate harvesting options (ie. harvesting as grain corn).

Tremendous variation in yield and quality can occur between fields. Many fields will have good yield and quality potential, while others do not. Higher yield reduces harvesting costs per tonne and increases the proportion of grain and therefore energy. Higher yielding corn fields contain a higher proportion of grain relative to stover, and are usually greater in digestible energy.

The expected grain value should be adjusted for custom combining, drying, and trucking charges to give a value of the crop in the field. The additional soil nutrient value (P and K) removed in the non-grain portion of the silage (stover) is significant, at about $3.50 per tonne of corn silage. Calculating the cost per lb or tonne of dry matter can help put corn silage in perspective relative to what the market was willing to pay for standing hay. If the seller is going to fill the silo for the buyer, custom silo filling charges should also be added. The Crop Budgeting Aids and the Custom Rate Survey are available from OMAFRA at www.gov.on.ca/OMAFRA/english/busdev/agbusdev.html. Storage costs, fermentation shrink and spoilage losses are not included.

Because of the increased grain corn prices, corn silage price calculations have almost doubled from last year and tripled from only a few years ago. Percent moisture will have a significant impact on price, so it is important to sample and get reliable moisture numbers. An error of only 5% moisture (ie. estimating 65% instead of 70%) is equivalent to almost $8 per tonne.

Salvaging A Poor Corn Crop

Farmers attempting to salvage poor corn fields damaged by lack of rain by harvesting them as silage should be aware of some of the harvesting and nutrition implications. Information on harvest and storage of corn silage, including "Harvesting Corn Silage At The Right Moisture", "Drought Damaged Corn Silage" and "Grazing Corn Stover" is available on the OMAFRA Crop Website at http://www.omafra.gov.on.ca/english/crops/field/forages.html.

Tremendous variation can occur in drought-stressed corn fields. Some fields will have short plant height with more normal ears, so the ratio of grain to stover may be reasonably normal. Yields will be reduced, but forage quality may be fairly normal. Other fields could be more normal in height but have very small ears. These fields will have a very low ratio of grain to stover, much lower than the "thumb rule" 7.7 bushels grain per tonne (7.0 bu/ton) of silage at 65% moisture for a good crop.

Other Considerations

The local supply and demand of corn silage and alternate forages will influence the price. The availability of silage storage and the economics of feeding are considerations. Sellers with Crop Insurance should contact Agricorp (1-888-247-4999) before harvest to determine how selling corn as silage will impact a claim. Good yield and quality estimates are important and should take into consideration actual weights and percent moisture. The removal of the stover organic matter could be considered as well.

This example is meant to be a general guide for farmers and should be used as a starting point in negotiations between the buyer and seller. Make your own assumptions and do the calculations specific to your situation.

Table 1 - Pricing Corn Silage Example Calculations (Minimum Values)

	Example #1 "normal"	Example #2 "stressed"
grain yield bushels / ac	160	100
grain yield metric tonne (mt)/ac	4.1	2.5
bu grain (15.5%) / mt silage	7.7	6.5
corn silage yield - mt / ac (65% moisture)	20.8	15.4
grain price $ / mt (#2 grade, fall delivery, local)	$280	$280
gross grain value / ac (yield X price)	$1,148	$700
- drying (24% moisture @ $22 / mt)	-90.20	-55.00
- combining	-35.00	-35.00
- trucking (@ $8.00 / mt)	-32.80	-20.00
= gross value / ac less grain harvesting costs	$990	590
+ extra P & K removed in the stover (~$3.50/mt of silage)	+72.80	+53.90
per acre	1,062.80	643.90
standing corn per metric tonne (mt)	**$51.10**	**$41.81**
¢ / lb dry matter	6.6¢	5.4¢
$ / tonne dry matter	$146	$119
+ silo filling ($175/hour, 2.5 acres/ hour)	+70.00	+70.00
per acre	1,132.88	713.90
harvested corn silage per metric tonne (mt) (before shrink, spoilage & storage cost)	**54.47**	**46.36**

Set the Stage for BIG Wheat Yields!

By Peter Johnson, Provincial Cereal Specialist

OUCH! 2011 had the lowest provincial wheat yield since 2005. Despite a great start, and lots of better management applied, the outcome was sorely disappointing. What do we do this fall to avoid this happening again in 2012?

1. **Pick the right variety**: There are lots of new options and even new types of wheat available. Check out what will do best on your farm at www.gocereals.ca.

2. **DRAINAGE**! Whether tile or surface drainage, nothing has a bigger impact on long term wheat yields than drainage. You pay for drainage whether you have it or not……

3. **Set the combine**: Good wheat crops start at the combine. If the trash is not being spread across the width of the cut, you can guarantee less than optimal wheat performance, and variable growth that will impact spring management. Chaff spreaders are a MUST!

4. **Plant early**: Every day delay in planting reduces yields by 1 bu/ac. Whether it means rushing soybean harvest or working all night, do everything you can to get the wheat planted immediately!

5. **Don't bother with tillage**: If the combine is doing a good job spreading the trash, there is no benefit to tillage. Use surface tillage only when necessary to dry soils out and speed planting.

6. **Fall weed control:** The best control of perennial weeds comes in the fall. Spray glyphosate either as a preharvest burndown, preplant, or postplant, but get it on!

7. **Treated seed**: with dwarf bunt rearing its head in 2011, the value of seed treatments was driven home yet again. No wheat seed should go in the ground untreated, and growers with dwarf bunt need to take extra precautions.

8. **Seed the right rate**: New data is showing more interaction between seeding date and seeding rate, especially when managing wheat for top yields. When you are early, target 17 seeds/ft, when seeding late drill 27 to 30. In the normal window, 22 seeds/ft is the target (1.5 million seeds/acre).

9. **Set seeding depth accurately**! 90% of problem calls in the spring can be related back to planting depth, and mostly the wheat is too shallow. Target 1 to 1.5 inch depth. Plant to moisture, and set the drill in the "tough spots".

10. **Starter fertilizer**: The benefits of seed placed starter in wheat are well documented. New research shows that 5 gal of liquid, or 40 pounds of dry, are a minimum application to get good in furrow distribution and crop response. If you don't have seed placed capability, broadcast fertilizer still helps. While not as good as seed placed, wheat responds to broadcast better than other crops.

Plant WHEAT! Economics may currently favour corn, but the value of wheat in the rotation can not be overlooked. 10% higher corn and soybean yields, options for different weed control products and timings, the list is too long and extensive to include it all.

While 2011 wheat yields were disappointing for many, 2012 is a whole new start. Follow the suggestions above, and let's get set up for a new RECORD wheat yield in 2012!!!!!!

Agricultural Information Contact Centre:
1-877-424-1300
E-mail: ag.info.omafra@ontario.ca
Northern Ontario Regional Office:
1-800-461- 6132
www.ontario.ca/omafra